

Date: Tue, 13 Sep 94 04:30:21 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V94 #306  
To: Ham-Ant

Ham-Ant Digest                      Tue, 13 Sep 94                      Volume 94 : Issue    306

Today's Topics:

                    2 meters quad help  
                    Antenna for Satellite SW  
                    Antenna gain ratings?  
         cell phone directional antenna? (2 msgs)  
         dell phone directional antenna  
                    DISTRIBUTION STATUS  
         Flagpole verticals need help?  
                    Home Brew Antennas  
         Loaded tower as 160m vertical - formula needed  
         Please Help: 1/4 wave 2m/70cm Antenna Help  
                    test  
                    Which one?

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

-----

Date: 12 Sep 1994 16:37:25 GMT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!math.ohio-state.edu!jussieu.fr!  
univ-lyon1.fr!swidir.switch.ch!scsing.switch.ch!news.belwue.de!news.uni-  
stuttgart.de!moritz@network.ucsd.edu  
Subject: 2 meters quad help  
To: ham-ant@ucsd.edu

In article <34ncsu\$s9e@xap.xyplex.com>,  
Scott Sminkey - Sustaining Eng Group <sas@opus.xyplex.com> wrote:  
>  
>Another interesting design to consider is the "quagi", which uses a

>quad type element for the reflector and driven elements and yagi type  
>elements for the directors.

>

>

Well, I am afraid that although a quagi will surely work, there will be no advantage over a yagi fed by a folded dipole with cable balun.

A two element quad surely may be a easy to build low gain beam, but why would someone build such a complicated structure as a 4 ele quad? BTW, with increasing gain proper symetry becomes essential, and a corroded or improperly set up gamma match may well give a good swr, but may cause the antenna to squint.

Depending on the initial design (not the narrow-band-gain-optimized jobs) a Yagi can be quite forgiving, and than is easily constructed from simple material, as has been pointed out somewhere else in this thread.

For good reasons most beams on VHF are either HB9CV (ultimate compactness) or "long yagis" i.e. elements spaced approx. 0.25 wl.

73, Moritz DL5UH

-----

Date: Fri, 9 Sep 1994 20:57:52

From: agate!deep.rsoft.bc.ca!deep4.dial.mindlink.bc.ca!david\_lipscomb@ames.arpa

Subject: Antenna for Satellite SW

To: ham-ant@ucsd.edu

I wonder if anyone could help me out on this: I understand that the Deutsche Welle has a satellite repeater in the 6-7MHz range (49 meter SW band) on a geostationary bird in easy sight from the west coast. Question: given that I cannot even detect the existence of the station using a reasonably selective and sensitive receiver, what sort of antenna could I use to focus on the satellite? Would I need a parabolic antenna? Does anyone know where such an antenna could be bought ... though I'd rather make one myself.

Any advice by email or posted in the newsgroup would be very gratefully received.

david\_lipscomb@mindlink.bc.ca

THANKS!!

-----

Date: Sat, 10 Sep 1994 05:35:29 GMT

From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!usc!nic-nac.CSU.net!

charnel.ecst.csuchico.edu!csusac!csus.edu!netcom.com!veltman@network.ucsd.edu  
Subject: Antenna gain ratings?  
To: ham-ant@ucsd.edu

Kenneth Kalan (kgk@nwu.edu) wrote:

: I'm going to be in the market for a 2m/70cm antenna soon and need help with the gain ratings. (I am currently considering the Cushcraft ARX 270, input/experiences about this or others would be appreciated.)

: Some companies list the gain in dB, while others use dBd or dBi. From my limited research, it appears that an antenna rated at 8 dBi is around 6 dB.

: Could someone post the differences in these measurement techniques?  
: Is dB the more accurate and/or standard measurement? Is there a conversion for dBd and dBi to dB or vice versa? I would like to compare antenna's on an even playing field.

: Thanks for your help.

: Ken

: N9YIR

: -----  
: Kenneth Kalan        PP ASEL                        ===\_ / |  
: Northwestern University       | \_\_\_/[\_\_\_] \\_\_\_/\_\_\_ |  
: Prosthetics Research Laboratory   | \\_\_\_ | \_\_\_ | \_\_\_ ===/  
: Rehabilitation Engineering Program   |       \/  
: kgk@nwu.edu           N9YIR                o       0  
: -----

Ken,

The other replys have given you pretty much the straight scoop. I would like to add a comment though.

You can easily estimate the gain of any antenna. If you assume that a dipole is at 0 dBd, every time you double the number of elements in the array, then you get to add 3 dB. I actually use 2.75 dB to account for miscellaneous losses.

Example -- You have a 8 element wiz bang. If you consider the first or driven element as 0 dB, then you can add a reflector to get 2.75 dB. Then since you have 2 elements, you add 2 more and you get a total gain of 5.5 dBd. You add your last 4 directors, doubling the size of the array, and get a grand total of 8.25 dBd.

Now, if you read in the catalogue that the 8 element wiz bang is 12 dB, then you can assume that they mean dBi or that they are just plain lying, which is not without the relm of possibility.

Anyway, I hope that I have given you something with which you can quickly analyze antenna gain by using the quick and dirty method. While there are no guarantees that all antennas will perform this way, this methodology will give you a good feel for the MAXIMUM gain of any array.

73

Paul WA6OKQ <veltman@netcom.com>

-----  
Date: 10 Sep 1994 14:06:35 GMT  
From: ihnp4.ucsd.edu!agate!spool.mu.edu!torn!news.unb.ca!nbt.nbnet.nb.ca!  
nbcc1.nbnet.nb.ca!user@network.ucsd.edu  
Subject: cell phone directional antenna?  
To: ham-ant@ucsd.edu

> Perhaps a dumb question. Why not use a land line telephone at home?

Not a dumb question.

I live on the Canada/US border. My land lines are Canadian - my cell phone is a US service. Although the US cell co. has a "roam" agreement with the local wire company, there are financial and practical benefits to using the cell at times (more useful if I don't have to drive a mile down the road).

For example, my US friends can call a local #, and my cell co. offers unlimited in-state long distance.

After all, life is simply a matter of selecting options...

-----  
Date: Sun, 11 Sep 94 23:12:07 -0500  
From: news2.near.net!news.delphi.com!usenet@yale.arpa  
Subject: cell phone directional antenna?  
To: ham-ant@ucsd.edu

I think MCM sells a cellular yagi antenna. I don't have their address handy, but probably can find it if you're interested. Otherwise there are computer programs for yagi design that will accept all the parameters for frequency, number of elements, etc. and produce a design. I don't know their names but I've heard of them.

Bob Sadur AA2NY (bobsadur@delphi.com)

-----  
Date: 12 Sep 94 14:29:00 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: dell phone directional antenna



From: news-mail-gateway@ucsd.edu  
Subject: DISTRIBUTION STATUS  
To: ham-ant@ucsd.edu

SMTPGATE.HAMANT        DISTRIBUTION STATUS INFORMATION        09/12/94 06:02  
:26

=====

DISTRIBUTION ID: SMTPGATE.HAMANT.9181  
SUBJECT            : Ham-Ant Digest V94 #305  
DOCUMENT NAME     : %%DOCNAME  
DATE    SENT      : 09/12/94            TIME SENT: 05:55:00

=====

YOUR MAIL WAS NOT DELIVERED FOR THE FOLLOWING REASON:

SNADS STATUS     : 0006  
X.400 CODE       : %%DIAGCODE  
INFORMATION      : %%SUPPLINFO  
EXPLANATION      : SNADS PERMANENT SERVER ERROR

=====

RECIPIENT        : CCMAIL.00A8929  
LAST NAME        :  
FIRST NAME       :  
MIDDLE INITIAL   :  
INITIALS         :  
NATIVE NAME      :  
COUNTRY          :  
ADMD             :  
PRMD             :  
ORGANIZATION     :  
ORG UNIT 1       :  
ORG UNIT 2       :  
ORG UNIT 3       :  
ORG UNIT 4       :  
DDA              :  
TITLE            :  
DESCRIPTION       :  
USERDATA         :  
TELEPHONE        :

-----

Date: 12 Sep 94 16:45:00 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Flagpole verticals need help?

To: ham-ant@ucsd.edu

In digest 305 Jim (KB0FIR/4) writes:

```
>Does anyone have any information about putting HF verticals inside PVC?
>I have purchased a Hustler 6-BTV which will fit inside a 3" PVC
>pipe. How do you get the darn thing to stand upright and
>still "loook" like a flagple. please e-mail or post any suggestions.
>.....73, Jim (KB0FIR/4)
>
>-----
```

Well Jim (DeForest Kelly's voice),

You can use the white PVC water pipe (SCH-40) stuff. It is pretty stiff. The 3" stuff should stand pretty strait. If not, you might need to put some guys about 3/4 way up. Don't paint it! It requires a special paint and primer to paint the white PVC. The paint contains zinc that could cause it to be rather lossy. If you want to remove the lettering, sand it. Don't use the gray polibutalene stuff. It is very lossy and not very stiff.

Kevin

Legal stuff:

The above opinions are my own and not necessarily those of the staff, faculty, administration, or lab animals (woof!) of The University of Texas Health Science Center at San Antonio or anyone else who is not me.

```
*****
Kevin R. Muenzler, WB5RUE          The University of Texas Health
muenzlerk@uthscsa.edu             Science Center at San Antonio,
                                   Department of Computing Resources
```

```
    ** There is no such thing as a Monkey-Proof Program! **
    **                      I can prove it!                      **
```

```
-----
                                |    I am Voltohm of Borg!
                                |    Resistance is E/I!
                                |    Power is EI!
*****
-----
```

Date: Mon, 12 Sep 1994 17:14:26 GMT

From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!  
news.cac.psu.edu!news.pop.psu.edu!psuvax1!news.cc.swarthmore.edu!

netnews.upenn.edu!news.drexel.edu!news.ge@ihnp4.ucsd.edu  
Subject: Home Brew Antennas  
To: ham-ant@ucsd.edu

The Mt. Airy VHF Radio Club (the Packrats) September meeting will be held at the Southampton Free Library at 8:00 PM in Thursday, 15 September. The program will be on home brew VHF antennas -how to do it, sources of materials, etc. Home brew antennas will be shown and construction details provided. Everyone interested in VHF and above is welcome. Southampton is located on Street Road in Bucks County just north of Philadelphia, Pa.

73, Harry, W3IIT  
hbrown@resd.vf.ge.com

-----  
Date: 12 Sep 1994 22:40:56 GMT  
From: swiss.ans.net!howland.reston.ans.net!math.ohio-state.edu!jussieu.fr!univ-lyon1.fr!swidir.switch.ch!newsfeed.ACO.net!Austria.EU.net!EU.net!sunic!news.funet.fi!nntp.hut.fi@ns.oar.net  
Subject: Loaded tower as 160m vertical - formula needed  
To: ham-ant@ucsd.edu

I'm looking for a formula to calculate electrical length of a tower loaded with number of yagis at different heights. The ones I've found assume all beams to be at the top of the tower. In this case the tower is loaded with big yagis practically from bottom to top. Any reference appreciated.

What effects will the yagis have other than broader bandwidth and shift in electrical length ? Higher efficiency ? (some antennas are at the top).  
What else ?

Jukka OH6DD   jsi@hut.fi

-----  
Date: Sat, 10 Sep 1994 05:49:16 GMT  
From: ihnp4.ucsd.edu!news.cerf.net!nntp-server.caltech.edu!netline-fddi.jpl.nasa.gov!elroy.jpl.nasa.gov!grian!morris@network.ucsd.edu  
Subject: Please Help: 1/4 wave 2m/70cm Antenna Help  
To: ham-ant@ucsd.edu

fred-mckenzie@ksc.nasa.gov (Fred McKenzie) writes:

>In article <34ktte\$r5l@s.ms.uky.edu>, johnr@ms.uky.edu (John S. Roberts  
>Jr.) wrote:  
>> Is it possible to make  
>> a 1/4 wave 2m and 70cm antenna?



>John-

>Two meters has about three times the wavelength of 70cm. Therefore, a 1/4  
>wave ground plane on two meters, is approximately 3/4 wavelength on 440  
>MHz. It happens that the impedance of a 3/4 wavelength antenna is "sort  
>of" close to 50 ohms. In other words, a 1/4 wave ground plane for two  
>meters will work on 440 MHz. The pattern will not be directed toward the  
>horizon on 440, but will get you on the air until you can do better.

>Losses in your coax are higher on 440 MHz than on two meters. If the SWR  
>of this antenna happens to be a little high, reflected power will be  
>disguised by power loss in the coax!

A good friend of mine has a 1/4 wave 440/2m antenna on his Chevy S10 station wagon. The tuning trick is to use a thru-line wattmeter on 440, and cut it a little longer than the chart calls for, then prune to the best match on 440. The 440 adjustment will be much sharper than the 2m - so trim-tune to 440, and 2m will be just fine.

For what it's worth, the antenna used was a Larsen "NMO" series whip, and a "NMO" mount with the best coax he could get - it was white teflon, and made for cellphones - he wanted to be able to unscrew the whip and use it for a cellphone, or change whips again and use it for 1200mhz...

--

Mike Morris    WA6ILQ    | This space intentionally left blank.  
PO Box 1130        |  
Arcadia, CA. 91077    | All opinions must be my own since nobody pays  
818-447-7052 evenings | me enough to be their mouthpiece...

-----  
Date: 12 Sep 1994 18:55:55 GMT  
From: netcomsv!ix.netcom.com!netnews@decwrl.dec.com  
Subject: test  
To: ham-ant@ucsd.edu

test

-----  
Date: Mon, 12 Sep 1994 23:04:20 GMT  
From: wri!pea@uunet.uu.net  
Subject: Which one?  
To: ham-ant@ucsd.edu

Could someone give me the general consenous <sp> about which is better;

Cushcraft R-7 or the GAP VIII

Better in terms of quality of materials used, ease of assembly and tune up, and performance of course. Going to a ham meet in Peoria this weekend and was hoping to find a good deal on either one of the antennas mentioned above.

Thanks for your help.

Bruce  
N9WKE

--

```
-----  
|           =           @           | email #1: pea@wri.com |  
|           =           _ \          | email #2: bpea@prarienet.org |  
-----
```

End of Ham-Ant Digest V94 #306  
\*\*\*\*\*